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Inpatient Treatment for Severe Nonsurgical Dermatological Disorders: Prevalence, Care Infrastructure and Reimbursement in Switzerland

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Key Words
Diagnosis-related groups · Dermatology · Reimbursement · Cost

Abstract
Background: Since 2012, Swiss inpatient dermatology is funded through a flat rate payment system based on diagnosis-related groups (DRGs). ***Objective:*** To analyze the reimbursement of nonsurgically treated severe disorders of the skin under the system called SwissDRG. ***Methods:*** Three retrospective, cross-sectional cohort studies were performed. Data sets were received from the Swiss Federal Office of Statistics (1,285,685 retained records), the five Swiss university hospitals (370,964 retained records) and our center (72,211 retained records). ***Results:*** Cases accounted for 0.04% of all hospitalizations nationwide, with 43.7% treated at university hospitals. Treatment at university hospitals produced a mean loss of USD 3,711 per case. Lyell syndrome cases were especially underfunded (mean loss USD 31,906). Extra-county admissions and direct referrals were significant predictors of total inpatient costs ($p = 0.019$ and $p < 0.001$, respectively). ***Conclusions:*** We suggest grouping Lyell syndrome cases into burn DRGs and evaluating extra-county admissions and direct inpatient referrals as DRG split criteria.

Introduction

Inpatient care accounts for approximately one third of all health care costs for dermatological disorders in the USA, the proportion of cost for inpatient care being one quarter for bullous diseases, one sixth for drug eruptions and less than half a percent for psoriasis [1]. Navarini et al. [2] estimated the costs for inpatient care in Switzerland of psoriasis patients to be CHF 60 million (USD 65 million) in 2010.

Since 2012, inpatient medical care in Switzerland for acute somatic cases, including dermatological disorders, are reimbursed with a diagnosis-related group (DRG)-based prospective payment system called SwissDRG. University medical centers (UMCs) have had to face the radical change in reimbursement, from a per diem basis to a more or less fixed lump fee per DRG.

Elsewhere, DRG-based reimbursement systems have been implemented for some time and their impact on inpatient dermatology has been evaluated, especially in Germany. The most notable changes were a significant decrease in length of stay (LOS), an increase in hospital admissions and a moderate increase in average age [3, 4]. In particular, Wenke et al. [4] could show a reduction in mean LOS from 18.2 days (standard deviation, SD ±9.0) to 15.6 days (SD ±7.2) for psoriasis patients and from 15.8

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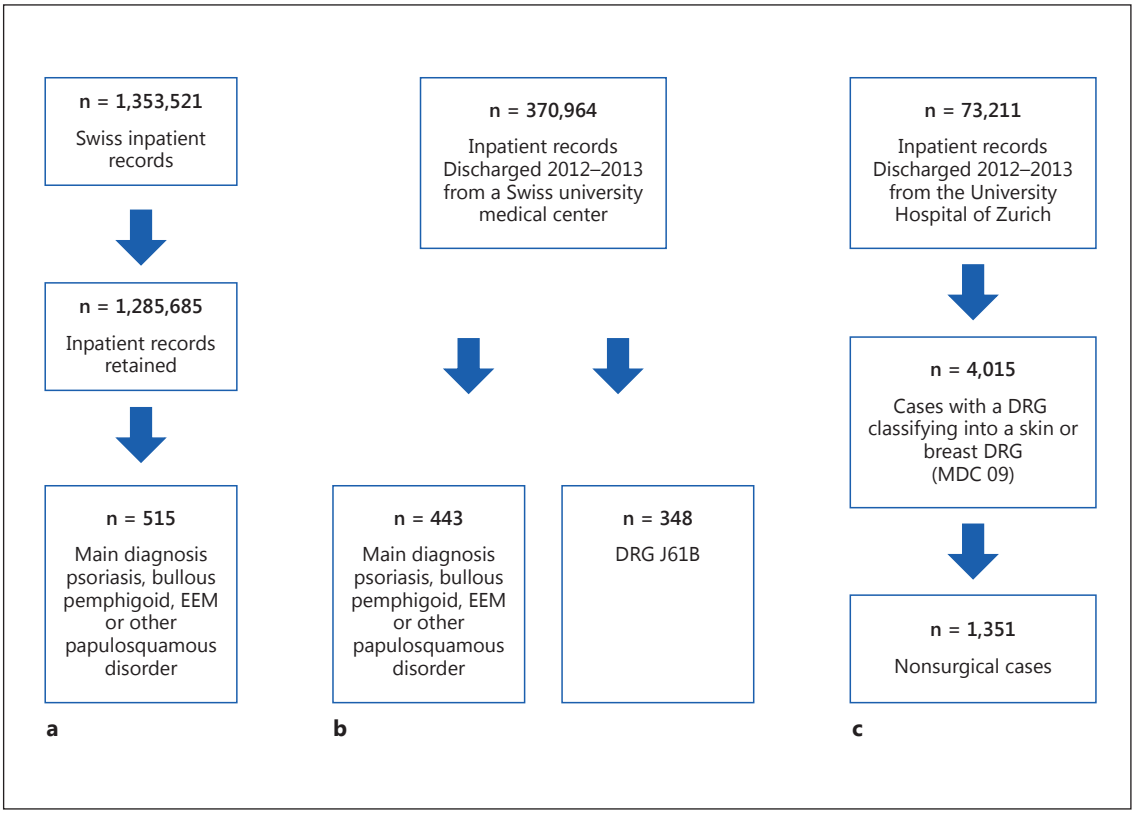

Fig. 1. Flowchart of study designs. **a** First study. Selection of a total of 515 inpatient cases discharged from Swiss hospitals in 2012. Data obtained from the FOS, Switzerland. **b** Second study. Respective analysis of 443 and 348 cases discharged from a Swiss university hospital in 2012 or 2013. **c** Third study. Selection of 1,351 nonsurgical cases classifying into a dermatological DRG (MDC 09).

days (SD ±13.3) to 10.3 days (SD ±10.2) for bullous dermatoses in a 4-year period from the introduction of DRGs in Germany in 2003 to 2006. Moreover, a decrease in allergy provocation tests in an inpatient setting in German UMCs was noted between 2008 and 2010 [5]. Nonetheless, the homogeneity of German dermatological DRGs upon introduction in 2003 was far from perfect and changes were necessary, affecting also DRG grouping of severe, nonsurgically treated operative disorders of the skin [6].

The aim of our study was to analyze the reimbursement of nonsurgically treated, severe disorders of the skin under SwissDRG and, where deemed appropriate, to amend changes. We focused on erythematosquamous or bullous skin disorders, including psoriasis, pityriasis rubra pilaris, pemphigoid disorders, and erythema exudativum multiforme (EEM)/Lyell syndrome.

Materials and Methods

We designed three retrospective, cross-sectional cohort studies based on the Swiss national medical data set from the Federal Office of Statistics (FOS) on cost and coding data of the five Swiss UMCs (University Hospital of Zurich – our institution –, CHUV Lausanne, University Hospital of Geneva, Inselspital Bern and University Hospital of Basel) as well as from cost, coding and administrative data from our center.

Psoriasis cases were selected with a main ICD-10 diagnosis L40, pemphigoid cases with ICD-10 L12, EEM/Lyell-syndrome with ICD-10 L51 and other erythematosquamous skin disorders including pityriasis rubra pilaris with ICD-10 L44.

The number of inpatient cases for the aforementioned disorders and the proportion of cases treated at university centers were calculated with the national medical data set of all hospitalized patients from the year 2012 provided by the FOS, comprising 1,353,521 data sets of hospital records (988,694 patients). After excluding erroneous data sets (statistic case B or C, patient ID = 0 or time since last hospitalization in days being an empty field or negative number), 1,285,685 case records (967,263 patients) were retained for further analysis (fig. 1a). Case fusions were not taken into account.

Table 1. Inpatient cases of psoriasis, bullous pemphigoid, EEM/Lyell or other papulosquamous disorders such as pityriasis rubra pilaris in Switzerland 2012

	Total (n = 515)	Bullous pemphigoid (n = 132)	EEM/Lyell (n = 75)	Other papulo-squamous disorders (n = 23)	Psoriasis (n = 285)
Hospital type					
UMC	225 (43.7%)	71 (53.8%)	24 (32.0%)	9 (39.1%)	121 (42.5%)
Full medical care provider (non-UMC)	144 (28.0%)	49 (37.1%)	27 (36.0%)	10 (43.5%)	58 (20.4%)
Hospital providing basic care	50 (9.7%)	9 (6.8%)	21 (28.0%)	2 (8.7%)	18 (6.3%)
Psychiatry	1 (0.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.4%)
Rehabilitation institution	5 (1.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (1.8%)
Specialized center	90 (17.5%)	3 (2.3%)	3 (4.0%)	2 (8.7%)	82 (28.8%)
LOS, days	10 (5–19)	10 (7–15)	6 (2–10)	9 (3–19)	11 (6–21)
Age, years	62 (45–75)	82 (74–88)	48 (20–64)	68 (29–75)	54 (43–65)
Female	232 (45.0%)	65 (49.2%)	32 (42.7%)	12 (52.2%)	123 (43.2%)
Days since last inpatient treatment	41 (0–552)	97 (0–598)	1 (0–414)	16 (0–91)	31 (0–625)
Last inpatient discharge <1 day	214 (41.6%)	34 (25.8%)	37 (49.3%)	10 (43.5%)	133 (46.7%)

Results are presented as absolute values (%) for nominal variables and as medians (interquartile ranges) for continuous variables.

We obtained the data from the permanent task force of the financial departments of all five Swiss UMCs (UNIFIN). In total, 370,964 case records with discharges in 2012 or 2013 were included in our analysis (fig. 1b).

For the analysis of innovative predictors for inpatient treatment costs, we analyzed 72,211 records from our center with discharges in 2012 or 2013 (fig. 1c). In total, 1,351 nonsurgical cases classifying into the major diagnostic category of diseases of the cutis, subcutis or mamma (major diagnostic category, MDC, 09) were retained.

Diagnoses were coded according to ICD-10-GM. The same national coding regulations applied to all hospitals. Coding was subject to independent external audits. UNIFIN records were coded with the SwissDRG web-based grouper for the year 2014 (version 3.0). A base rate of CHF 11,200 per case mix point was assumed for our calculations. Additional payments ('Zusatzentgelte') were not taken into account.

The costs analyzed were the total costs per case obtained from the UNIFIN data set and our hospital accounting data set. Total costs per case were the case-based individual costs determined by the full cost accounting method proscribed by national accounting guidelines for inpatient care institutions (REKOLE® [7]), which is in place in all Swiss hospitals. The format of the data set for case costs was identical with the format submitted to SwissDRG. A conversion rate of CHF 1 to USD 1.08 was assumed. The DRGs analyzed in the national data set were the actual DRGs of 2012 submitted to the FOS (SwissDRG version 1.0).

Data sets were processed by the business intelligence software QlikView® and exported to Microsoft Excel® for further analysis. Statistical analysis was done with IBM SPSS Statistics version 22 [8]. Significance was tested with the Mann-Whitney test. Results with $p < 0.05$ were considered significant.

The cost homogeneity coefficient (CH) for a DRG was calculated according to the formula $CH = 1/(1 + \sigma/\mu)$, where σ = SD and μ = arithmetic mean [9].

The local Institutional Review Board (Ethics Committee of the Canton of Zurich) gave its approval for our study.

Results

A total of 515 inpatient cases of severe skin disorders were recorded in the Swiss national database for inpatient medical records. These comprised 285 psoriasis cases (55.7%), 132 cases of bullous pemphigoid (25.9%), 75 cases of EEM/Lyell syndrome (14.6%), and 23 cases with other erythematosquamous disorders including pityriasis rubra pilaris (4.5%; table 1; fig. 2a). Overall, 225 cases were treated at a UMC (43.7%) and a further 144 at a hospital providing full health care coverage other than a UMC (28.0%; table 1; fig. 2b). Hence, these disorders accounted for 0.04% of inpatient cases in Switzerland in 2012 and were mostly treated in hospitals offering full medical services. In total, 62.1% were classified into the DRG J61B (n = 320), 9.5% into the DRG I66D (n = 49) and 8.3% into the DRG J61C (n = 43). For details, see online suppl. table 1 (for all online suppl. material, see www.karger.com/doi/10.1159/000437223). We assumed that the average cost for cases classifying as DRG J61B in the FOS statistic would be the most accurate approximation for total inpatient costs for our cohort. The reported average total cost per case was CHF 12,391 (SD 11,119; mean USD 13,382 ± 12,008) [10], amounting to a total of CHF 6,381,210 (SD 5,726,031; mean USD 6,891,706

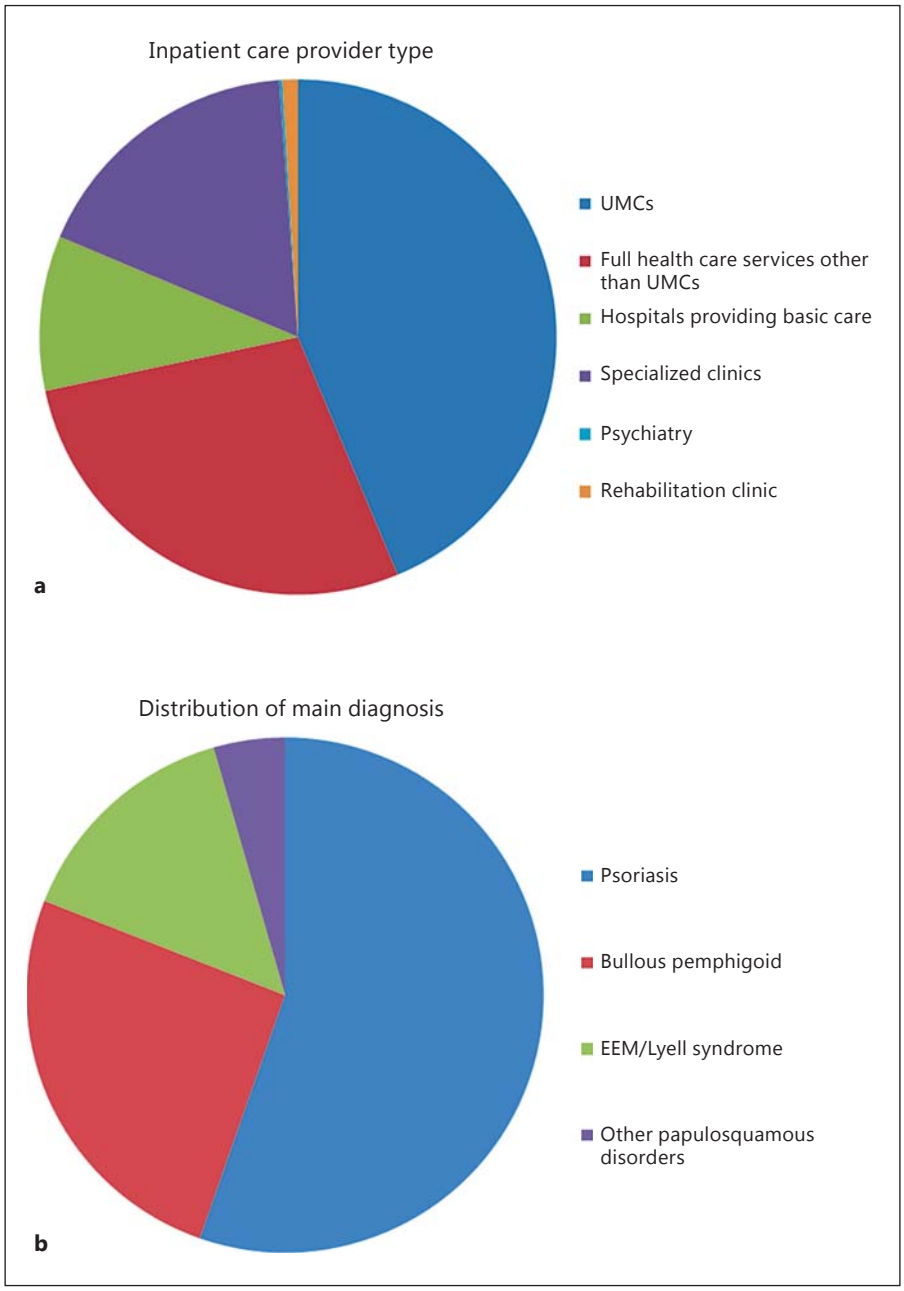

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Fig. 2. Inpatient care for severe dermatological disorders in Switzerland, 2012. Analysis of cases with a main diagnosis of psoriasis, bullous pemphigoid, EEM/Lyell syndrome or other erythematosquamous disorders such as pityriasis rubra pilaris (n = 515). **a** Distribution of cases according to hospital type. **b** Distribution of cases according to main diagnosis.

± 6,184,114) for inpatient care for these four dermatological diseases.

In a second step, we wanted to analyze the cost structure and reimbursement of these skin disorders treated at UMCs. We therefore searched all medical records from Swiss patients discharged in 2012 or 2013. Of 370,964 cases, 443 were retained (table 2). Patients with bullous pemphigoid were on average the oldest. The cohort with other erythematosquamous disorders had the longest LOS. With 2,329 case mix points, the cohort of cases with EEM/Lyell syndrome had a case mix index approximately twice as high as the cohorts with the other cutaneous disorders. With an average cost of CHF 34,548 (SD 56,196; mean USD 37,312 ± 60,692), they were also the most expensive to treat and with an average loss of CHF 8,466 (SD 19,677; mean USD 9,143 ± 21,251) – the disorder with the largest underfunding. In total, an average case was treated at a loss of CHF 3,436 (SD 10,270;

Table 2. Main diagnosis of nonsurgically treated severe skin disorder: discharges from all 5 UMCs 2012–2013

	Total (n = 443)	Bullous pemphigoid (n = 148)	EEM/Lyell syndrome (n = 51)	Other papulosquamous disorders (n = 18)	Psoriasis (n = 226)
Female	193 (43.6%)	72 (48.6%)	20 (39.2%)	9 (50.0%)	92 (40.7%)
Age, years	63 (46–77)	81 (72–85)	34 (20–54)	63 (43–71)	55 (43–66)
LOS, days	9.0 (6.0–16.0)	10.0 (6.5–16.0)	8.0 (5.0–14.0)	13.5 (9.0–24.0)	9.0 (5.0–15.0)
Case weight, points	1.294 (1.423)	1.201 (0.526)	2.329 (2.852)	1.246 (0.477)	1.126 (0.450)
DRG revenue per case, CHF	14,498 (15,933)	13,452 (5,888)	26,082 (43,147)	13,960 (5,342)	12,612 (5,045)
Total costs per case, CHF	17,934 (22,866)	19,005 (15,255)	34,548 (56,196)	17,349 (8,563)	13,530 (9,216)
Earnings per case, CHF	–3,436 (10,921)	–5,553 (11,618)	–8,466 (19,677)	–3,389 (4,919)	–918 (6,571)
Inliers	348 (78.6%)	123 (83.1%)	41 (80.4%)	12 (66.7%)	172 (76.1%)
High outliers	55 (12.4%)	19 (12.8)	2 (3.9%)	6 (33.3%)	28 (12.4%)
Low outliers	29 (6.5%)	3 (2.0%)	3 (5.9%)	0 (0%)	23 (10.2%)
Cases with deduction due to direct referral from another hospital	11 (2.5%)	3 (2.0%)	5 (9.8%)	0 (0%)	3 (1.3%)
DRG J61B	297 (67.0%)	113 (76.4%)	25 (49.0%)	14 (77.8%)	145 (64.2%)

Results are presented as absolute values (%) for nominal variables and as means (SD) for continuous variables. Age and LOS are presented as medians (interquartile ranges).

Table 3. DRG J61B: discharges from all 5 UMCs 2012–2013

	Total (n = 348)	Hospital 1 (n = 119)	Hospital 2 (n = 114)	Hospital 3 (n = 55)	Hospital 4 (n = 42)	Hospital 5 (n = 18)
Main diagnosis						
Psoriasis	145 (41.7%)	73 (61.3%)	43 (37.7%)	12 (21.8%)	11 (26.2%)	6 (33.3%)
Bullous pemphigoid	113 (32.5%)	21 (17.6%)	45 (39.5 %)	24 (43.6%)	17 (40.5%)	6 (33.3%)
EEM/Lyell	25 (7.2%)	7 (5.9%)	6 (5.3%)	8 (14.5%)	4 (9.5%)	0 (0.0%)
Other papulosquamous disorders	14 (4.0%)	11 (9.2%)	1 (0.9%)	0 (0.0%)	0 (0.0%)	2 (11.1%)
Other	51 (14.7%)	7 (5.9%)	19 (16.7%)	11 (20.0%)	10 (23.8%)	4 (22.2%)
Age, years	66 (49–79)	59 (45–73)	68 (51–80)	69 (43–82)	74 (54–83)	73 (54–84)
Female	160 (46.0%)	53 (44.5%)	51 (44.7%)	27 (49.1%)	23 (54.8%)	6 (33.3%)
LOS, days	9.0 (6.0–15.0)	15.0 (9.0–18.0)	6.0 (4.0–8.0)	9.0 (6.0–14.0)	10.0 (7.0–15.0)	13.5 (7.0–19.0)
Case mix points	1.115 (0.347)	1.192 (0.427)	1.006 (0.114)	1.092 (0.351)	1.184 (0.423)	1.210 (0.381)
Total case costs, CHF	15,772 (12,453)	16,953 (11,520)	10,910 (5,553)	17,183 (14,036)	23,099 (20,089)	17,358 (11,405)
DRG revenue per case, CHF	12,490 (3,891)	13,347 (4,783)	11,267 (1,275)	12,233 (3,931)	13,260 (4,738)	13,551 (4,267)
Earnings per case, CHF	–3,283 (10,270)	–3,606 (9,607)	357 (5,307)	–4,950 (11,520)	–9,839 (16,219)	–3,807 (7,999)
DRG status						
Inliers	289 (83.0%)	91 (76.5%)	103 (90.4%)	46 (83.6%)	35 (83.3%)	14 (77.8%)
High outliers	41 (11.8%)	26 (21.8%)	0 (0.0%)	4 (7.3%)	7 (16.7%)	4 (22.2%)
Low outliers	12 (3.4%)	0 (0.0%)	9 (7.9%)	3 (5.5%)	0 (0%)	0 (0.0%)
Cases with referral	6 (1.7%)	2 (1.7%)	2 (1.8%)	2 (3.6%)	0 (0.0%)	

Results are presented as absolute values (%) for nominal variables and as means (SD) for continuous variables. Age and LOS are presented as medians (interquartile ranges).

mean USD 3,711 ± 11,092). A total of 79% were inliers, 12% were high outliers by LOS and 67% were grouped into the DRG J61B.

As the majority of cases were grouped into the J61B, we subsequently analyzed the discharges from all five centers with this particular DRG. Of 370,964 cases, 348 were retained. Results are summarized in table 3 and figure 3. The most frequent pathology was psoriasis (41.7%) followed by bullous pemphigoid (32.5%). Hospital 1 had a remarkably high proportion of psoriasis patients (61.3%)

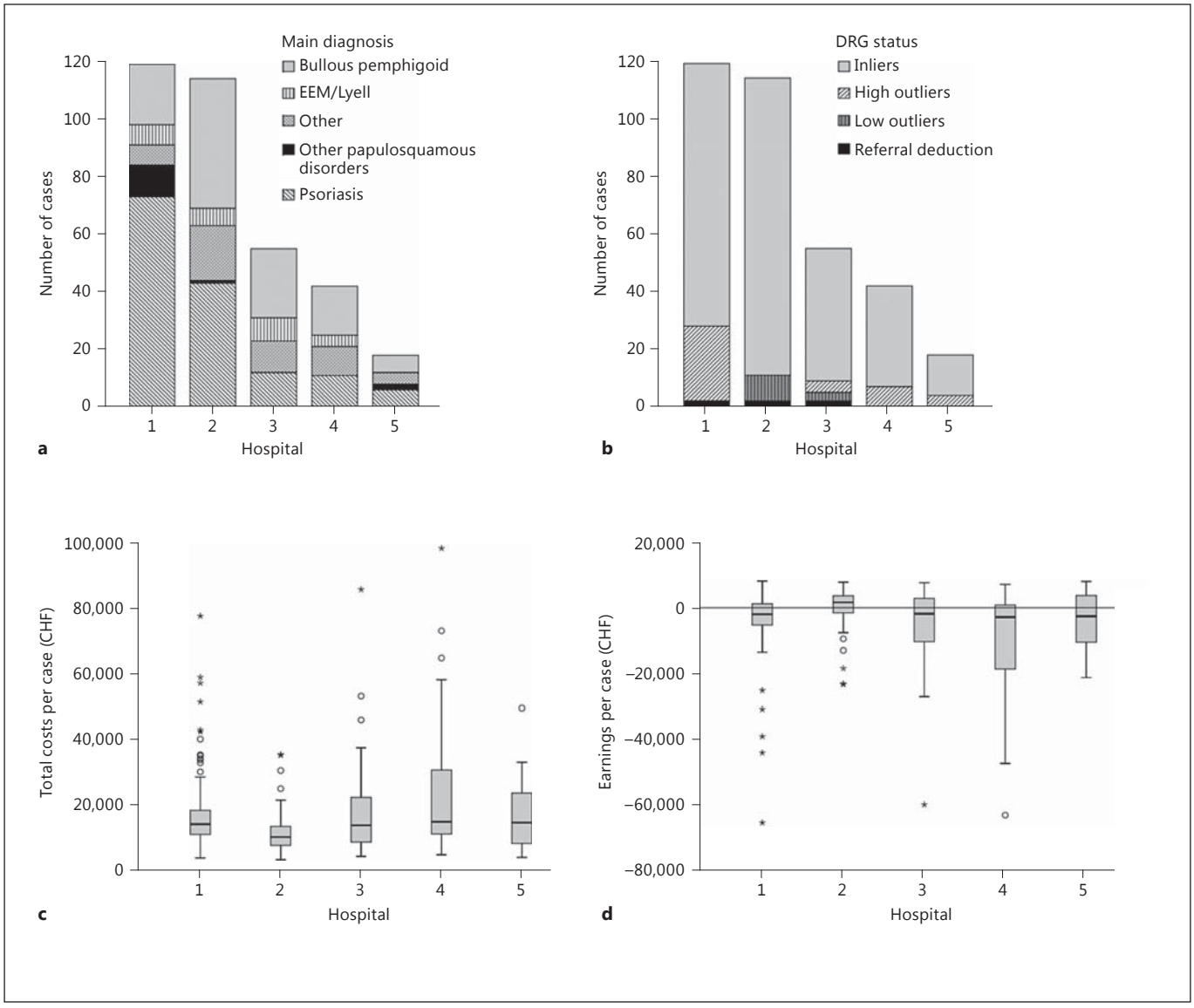

Fig. 3. Analysis of the DRG J61B. Discharges from 2012 and 2013 from any of the 5 Swiss university hospitals (n = 348). **a** Distribution of cases by main diagnosis at the 5 centers. **b** Distribution of LOS status at the 5 centers. **c** Distribution of total treatment costs at the 5 centers. **d** Distribution of earnings at the 5 centers. Bar charts: the numbers of cases are shown as absolute values. Box plots: the upper and lower bounds of the boxes indicate the 75th and 25th percentiles, respectively; the broad line in the box indicates the median. Bars indicate the 5th and 95th percentiles; circles and stars indicate outliers.

and a remarkably low proportion of bullous pemphigoid cases (17.6%). Hospital 2 was the only center without high outliers and had 7.9% low outliers. It was also the only center treating cases at full cost coverage, with a mean of CHF 357 (SD 5,307; mean USD 386 ± 5,732).

The coefficient of homogeneity for all J61B cases discharged from the five UMCs was 55.9%. When only the inliers were retained (n = 289), the coefficient of homogeneity amounted to 63.2%, with a mean of CHF 13,279 (SD 7,734; mean USD 13,341 ± 8,353). When including inliers only, the distribution of total costs per case was skewed to the right (skewness 3.215, SD 0.143). Graphical tests for normality of cost distribution are shown in online supplementary figure 1.

We then took a closer look at the 51 cases of EEM/Lyell syndrome. Amongst those cases, 11 were Lyell syn-

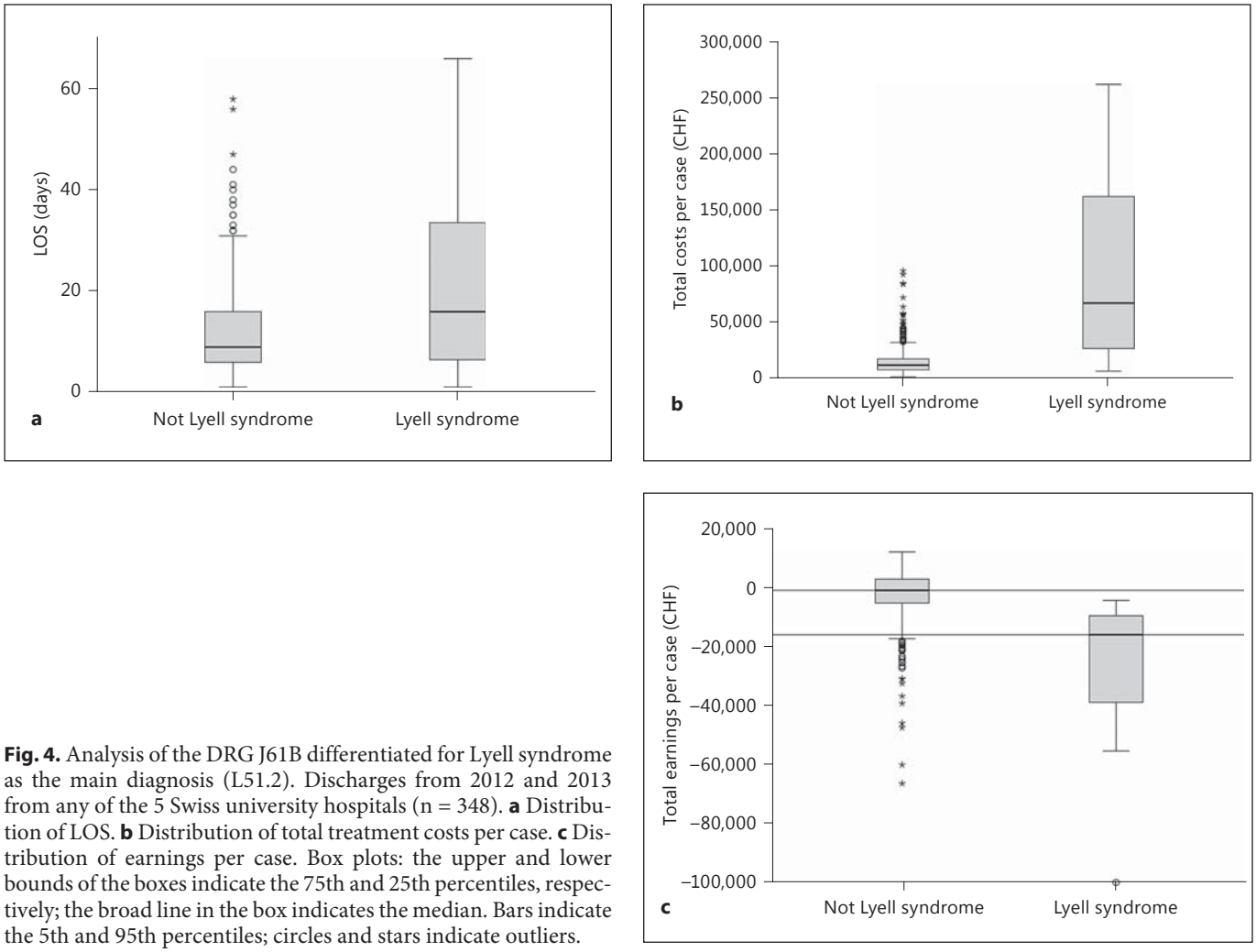

Fig. 4. Analysis of the DRG J61B differentiated for Lyell syndrome as the main diagnosis (L51.2). Discharges from 2012 and 2013 from any of the 5 Swiss university hospitals (n = 348). **a** Distribution of LOS. **b** Distribution of total treatment costs per case. **c** Distribution of earnings per case. Box plots: the upper and lower bounds of the boxes indicate the 75th and 25th percentiles, respectively; the broad line in the box indicates the median. Bars indicate the 5th and 95th percentiles; circles and stars indicate outliers.

drome, with an average cost per case of CHF 102,220 (SD 86,371; mean USD 110,398 ± 93,281) and a median LOS of 16.0 days (interquartile range 6.5–33.5 days). The average loss per case of Lyell syndrome amounted to CHF 29,542 (SD 27,481; mean USD 31,906 ± 29,680; table 4; fig. 4).

In a last step, we searched for other predictors for high cost cases. Therefore, we analyzed all nonsurgical cases classifying into a skin or breast DRG (MDC 09) discharged from our center (table 5). A county of residence different to that of our center or a direct referral from another hospital were significant predictors for total cost ($p = 0.019$ and $p < 0.001$, respectively). Discharges to rehabilitation centers showed a strong tendency to being more expensive to treat, although results were not significant ($p = 0.055$).

Discussion

A proportion of 0.04% of all inpatient hospitalizations in Switzerland in 2012 were cases with a primary diagnosis of psoriasis, bullous pemphigoid, EEM/Lyell syndrome, or other erythematosquamous disorder. A total of 43.7% were treated at university hospitals. We estimated the inpatient treatment cost at CHF 6.4 million (USD 6.9 million). Our study cannot confirm the inpatient treatment costs for psoriasis in Switzerland published by Navarini et al. [2] in 2010. Assuming half of our estimated treatment costs were due to psoriasis cases (55.6% of total cases), the discrepancy in the estimated nationwide inpatient disease burden was 20-fold. One reason could be that our study selected cases only by main diagnosis. Indeed, Navarini et al. published a total of 3,578 cases

Table 4. Severe dermatological disorders differentiated for the main diagnosis of Lyell syndrome: discharges from all 5 UMCs 2012–2013

	Total (n = 443)	Non-Lyell syndrome (n = 432)	Lyell syndrome (n = 11)
Age, years	63 (46–77)	63.5 (47–77)	45 (28–74)
Female	193 (43.6%)	187 (43.3%)	6 (54.5%)
LOS, days	9.0 (6.0–16.0)	9.0 (6.0–16.0)	16.0 (5.0–35.0)
Total costs per case, CHF	17,934 (22,866)	15,788 (12,644)	102,220 (90,587)
DRG revenue per case, CHF	14,498 (15,933)	13,017 (6,025)	72,678 (76,407)
Total earnings per case, CHF	–3,435 (10,921)	–2,771 (9,230)	–29,542 (28,823)
p value		<0.001	

Results are presented as absolute values (%) for nominal variables and as means (SD) for continuous variables. Age and LOS are presented as medians (interquartile ranges).

Table 5. Predictors of total costs in nonsurgical, dermatological DRGs (MDC 09, partition M): discharges from our center 2012–2013

	Total (n = 1,341)	Patients from the same county (n = 988)	Patients from a different county (n = 363)	Not referred from another hospital (n = 1,307)	Referred from another hospital (n = 44)	Not discharged to rehabilitation center (n = 1,341)	Discharged to rehabilitation center (n = 10)
Age, years	56 (41–72)	58 (41–74)	54 (39–68)	56 (41–72)	52.5 (40.5–81.5)	56 (41–72)	69.5 (40–77)
Female	672 (49.7%)	492 (49.8%)	180 (49.6%)	653 (50.0%)		688 (49.8%)	4 (40.0%)
LOS, days	5.0 (2.0–11.0)	5.0 (2.0–10.0)	6.0 (2.0–12.0)	5.0 (2.0–11.0)	8.0 (3.0–13.5)	5.0 (2.0–11.0)	13.5 (3–16)
Psoriasis, bullous pemphigoid, other papulosquamous, EEM/Lyell	122 (9.0%)	81 (8.2%)	41 (11.3%)	114 (8.7%)	8 (18.2%)	119 (8.9%)	3 (30.0%)
Tumor	218 (16.1%)	130 (13.2%)	88 (24.2%)	215 (16.4%)	3 (6.8%)	217 (16.2%)	1 (10%)
Total costs per case, CHF	9,011 (7,901)	8,647 (7,257)	10,003 (9,372)	8,771 (7,471)	16,153 (14,513)	8,978 (7,891)	13,511 (8,373)
DRG revenue per case, CHF	7,927 (4,425)	7,725 (4,432)	8,475 (4,366)	7,910 (4,428)	8,430 (4,362)	7,909 (4,422)	10,338 (4,489)
Earnings per case, CHF	–1,085 (5,510)	–922 (4,713)	–1,527 (7,238)	–861 (4,992)	–7,722 (12,227)	–1,069 (5,512)	–3,173 (5,054)
p value		0.019		<0.001		0.055	

Results are presented as absolute values (%) for nominal variables and as means (SD) for continuous variables. Age and LOS are presented as medians (interquartile range).

with psoriasis diagnosis in 2004. As the main diagnosis reflects the primarily treated morbidity, we assume that our cost estimation is more realistic. Our assumption is confirmed by Bickers et al. [1], who published inpatient treatment costs for psoriasis in the USA of USD 6 million, in a country with a population 40 times larger. However, it is important to state that hospitalization for psoriasis in the USA is much less frequent than in Europe [11]. Nearly two thirds of the cases were grouped into the DRG J61B.

Psoriasis was the most common disorder treated at any of the five UMCs in 2012–2013, accounting for just over half the cases (51.0%). Patients with bullous pemphigoid were on average the oldest (median age 81 years); other erythematosquamous disorders such as pityriasis rubra pilaris were on average hospitalized for the longest (median 13.5 days). Cases with EEM/Lyell syndrome were the most expensive and were also the most underfunded, with a mean cost of CHF 34,548 (USD 37,312) and a mean loss of CHF 8,466 (USD 9,143). This was due to the 11 cases of Lyell syndrome. This subcohort had a median LOS of 16.0 days, mean treatment costs of CHF 102,220 and an underfunding of CHF 29,542. This is not surprising, as cases with Lyell syndrome require completely different care and are treated as severe burns in specialized intensive care units. We therefore advocate

excluding cases with a main diagnosis of Lyell syndrome (ICD-10 L51.2-) from the dermatological DRGs (MDC 09) and including these cases into burn DRGs (MDC 22). Cost coverage could be achieved by grouping Lyell syndrome cases into the DRG Y01Z.

For historical reasons, the diagnosis of Lyell syndrome/Stevens-Johnson syndrome on the one hand, as well as EEM on the other hand, are listed under the same diagnostic family L51 [12]. However, evidence has shown that EEM is a different clinical entity to Stevens-Johnson syndrome and Lyell syndrome, with the former being linked to herpes virus infections, whereas Stevens-Johnson syndrome and Lyell syndrome form a continuum of severity of the same disease linked to severe pharmacoimmunological reactions [13, 14]. We grouped the cases due to ICD similarity. However, the difference in financial results reflecting the strong difference in treatment requirements further underlines the difference between these two separate disease entities.

We were surprised by the fact that 28% of EEM/Lyell cases in Switzerland in 2012 were treated at hospitals providing basic care in comparison to fewer than 10% for all other diseases. We explain this by the fact that EEM-Lyell has a very acute onset, sometimes manifesting itself during hospitalization, and is treated regionally without referral to specialized dermatological inpatient departments.

The DRG J61B shows a wide and strongly right-skewed cost distribution. Including outliers, the cost homogeneity coefficient was low at 55.9%. Considering inlier cases only, we calculate a cost homogeneity coefficient of 62.3%. We therefore conclude that J61B is not homogenous for costs at a UMC level and warrants improvement. Referral from other hospitals and extra-county admissions were two variables significantly predicting total cost for nonsurgical, dermatological cases. We therefore suggest testing these variables for their possibility of use as split criteria within the Swiss DRG system.

Disclosure Statement

None of the authors have any conflicts of interest to declare.

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